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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,830	12/29/2003	Ga-Lane Chen		7172

25859 7590 01/17/2007  
WEI TE CHUNG  
FOXCONN INTERNATIONAL, INC.  
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SANTA CLARA, CA 95050

EXAMINER
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DOWLING, WILLIAM C

ART UNIT	PAPER NUMBER
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2851

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/748,830

Applicant(s)

CHEN ET AL.

Examiner

William C. Dowling

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 8-9, 11-12, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gove et al. in view of Yang (5,612,814)

Gove et al. teaches the direct illumination of a micromirror spatial light modulator (118) with light from a light source (120). Modulated light is projected through projection lens (124) onto a display surface (128). As noted in Column 6 Lines 29-31 the micromirrors are electromechanically deflected. Deflection occurs by deflecting mirrors in an on state direction in which light reaches a projection lens and an off state direction in which no light reaches the projection lens, resulting in a black state.

Gove does not teach the use of color filters in conjunction with the micromirrors to form full color images.

Yang discloses a DMD image projection device comprising:

a micro-mirror unit (220,250) having a plurality of deflectable micromirrors (230) switchable between on and off states;

a color filter (220) having three colors allowing for 8 states of projection

It would have been obvious to one skilled in the art at the time of the invention to modify the device of Gove et al. by the addition of a color filter adjacent micromirrors, as taught by Yang in order to form a full color modulator system with direct illumination, and avoid the necessity of providing a sequential color filter.

3. Claims 3-5, 7, 10, 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gove et al. and Yang et al. and further in view of and Hornbeck (5,583,688).

4. Gove et al. do not specify particulars of a DMD device

Hornbeck (5,583,688) teaches a known structure of a DMD device including a metal oxide semiconductor layer (316), a metal layer (308), a torsion layer (304) and a silicon substrate (318) and address electrodes (314) formed on the layers. Aluminum is deposited on an outer surface to form mirrors (43) Fig 4f. Pulse width modulation is also provided (Column 7 Line 2)

It would have been obvious to one skilled in the art to modify the optical arrangement of Gove et al. for use with any of a number of known types of deformable mirror devices such as the one having a particular structure as shown by Hornbeck because such modification is simply the substitution of one type of reflective modulator for another within a known optical arrangement.

### ***Response to Arguments***

5. Applicant's arguments filed 10/19/06 have been fully considered but they are not persuasive.

Applicant argues that Gove does not teach the use of color filter means as a means for providing colored light from the spatial light modulator. This is true. It the Yang reference which provides the teaching of providing color filter arrays in combination with reflective modulator arrays to form color images from a single modulator.

Applicant further argues that Gove does not teach the DMD having an ON state and an OFF state. This is unpersuasive. Gove teaches a common example of a prior art DMD projector having a modulator as shown in figure 4 which the micromirror may be deflected to one side or the other. One of ordinary skill in the art would have known that these known devices do so to reflect light towards a projection means or to a light dump of some sort where it not used for image projection. See for example 6,276,801. It is not required to provide references to explain what a reference would suggest to those skilled in the art. Applicant has presented no evidence that such devices do not work as the examiner has stated. In fact, applicant himself has relied upon such common knowledge in his specification in describing such a MEMS device. Absent such knowledge applicant's own specification would have to be considered non-enabled.

As regards applicant's argument with respect to the combination of the teaching of Gove with that of Yang, Gove is relied upon only to exemplify common prior art DMD modulators and Yang is relied upon to teach the placement of color filter means adjacent reflective modulator arrays to provide color images from a single modulator. Therefore the actual prior art teaching relied upon would in no way "be destroyed" by

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such a combination. Applicant is misinterpreting the rejection and law to require that any obviousness rejection require the physical combination of the totality of the structures within the references rather than what the disclosures of the references would teach or suggest to one skilled in the art. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Applicant has not adequately shown where that his invention differs in any way from a common DMD with color filter means provided.

As regards applicant's assertion that this action not be final because of a transposed listing of Gove and Yang within the heading of the rejection is unpersuasive. The body of the rejection is clear. There is no new rejection being made. The modification could have been written in either order since it is the teachings which are being combined. Applicant has been given a full opportunity to respond to the merits of the proposed combination.

### **Conclusion**

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

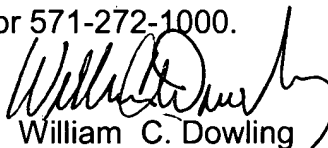
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Dowling whose telephone number is 571-272-2116. The examiner can normally be reached on MON-THURS.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
William C. Dowling  
Primary Examiner  
Art Unit 2851

wcd